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TREASURY DEPARTMENT

Public Health and Marine-Hospital Service of the United States

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THE PRESENT PANDEMIC OF PLAGUE

BY

ASSISTANT SURGEON-GENERAL J. M. EAGER

PREPARED BY DIRECTION OF THE SURGEON-GENERAL



WASHINGTON
GOVERNMENT PRINTING OFFICE
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THE PRESENT PANDEMIC OF PLAGUE.

By Assistant Surgeon-General J. M. EAGER.

No study presents more important and difficult sanitary problems than the lines of march taken by bubonic plague during the past fourteen years in its advance from the remote endemic focus of the disease in the province of Yunnan, China, to the numerous countries in all quarters of the globe, where by epidemic expansion plague has appeared and in many instances established itself in defiance of the most carefully planned preventive measures.

1894.—The revival of plague dates from the year 1894, when, escaping from the western Chinese province of Yunnan, it reached Canton, an important city and seaport of southern China. The first public knowledge of plague in Canton was in January, 1894, when Dr. Mary Niles was called to see General Wong's daughter-in-law, who was suffering from an inguinal bubo and grave constitutional symptoms.

The escape of plague from its endemic foci is not in itself an unusual event. It appears to be established that there are two distinct "strains" of plague, differing in the location of their permanent homes and in the facility for spreading outside the endemic foci. One of the endemic homes of plague is in western Asia. The "strain" lodged there does not possess the same power of diffusion as the Indo-Chinese "strain." It was the Indo-Chinese variety which, escaping from its endemic center in Yunnan, gave rise to the present pandemic. From 1879 to 1894 not a single year passed without the appearance of plague in some locality distant from endemic plague centers. India, Japan, Arabia, Persia, and Russia were thus invaded, but the disease did not develop pandemic proportions. The startling fact about the excursion of plague in 1894 is that it did not limit itself to the locality primarily visited, but began a series of ramifications that have since become world-wide. In 1894 plague was introduced from Canton into the neighboring island of Hongkong, a journey by water of about eight hours. During the height of the epidemic it was almost a daily event for deaths to occur en route from Canton to Hongkong. A rough estimate gives the number of deaths in Canton as 120,000 between March and August. All classes among the native population suffered, and rats were observed to be affected; but in the foreign quarter of Canton, with a population of about 300, not a single case occurred.

1895.—Cases of plague were reported at Hongkong, Amoy, Macao, and Foochoo, but these small outbreaks attracted little attention.

1896.—In the year 1896 sanitary attention throughout the world was focused on the threatening epidemic by the menacing and memorable appearance of the disease in Bombay, a port connected with Europe by quick and constant maritime communication. Although the gateway of entrance of plague into Bombay is uncertain, sanitary opinion favors the view that it was imported from southern China. The disease beginning in August spread throughout the whole vast territory of the Bombay Presidency and before the end of the year showed a total of 2,980 cases and 2,288 deaths. From the beginning of the outbreak, notwithstanding the opposition founded on the religious prejudice of the native population, active sanitary measures were adopted. Houses were evacuated, cleansed, and disinfected; the sick were isolated in special hospitals; notification of cases was made obligatory; special inspection was instituted on the railroads and at the principal ports, and Haffkine prophylactic inoculation was extensively practiced. Later the opposition founded on violation of caste distinctions provoked such disturbances that it was deemed advisable to modify the regulations at first put into practice.

Plague again appeared in Hongkong in 1896, where it has been epidemic ever since. Before the end of April the disease was scattered everywhere throughout the city. There were more than 1,000 deaths, and it was found that the rat burrows were infected. The disease reappeared in various parts of Canton, but the prevalence was not as bad as in the previous year—there were about half as many deaths. It was also present at Foochoo, and rats died in large numbers. There were nearly 200 cases in the island of Formosa with a large mortality. The appearance of the disease in Formosa was the beginning of a most destructive epidemic that has lasted to the present day. A single case died ashore at Yokohama twenty-four hours after arrival by sea from Hongkong. A small epidemic, with about 15 deaths, occurred among the Kurdish cavalry at Bitlis in Asiatic Turkey; and in November there were 2 cases, with 1 death, at St. Petersburg.

1897.—The number of cases of plague during the year 1897 in India was more than 73,000 with over 55,000 deaths. In the city of Bombay 13,000 cases occurred. Nearly all the other cases were in Bombay Presidency. In the Punjab there were about 300 cases, and the disease extended widely in western and northern India, though the cases were scattered and not comparatively numerous. Plague was present at Kurrachee and Madras.

In China there were epidemics at Amoy and Swatow; there was a score of deaths at Hongkong, and the disease was present at Macao. The island of Formosa suffered an epidemic that caused over 500 deaths. In Japan proper there were a few cases in Nagasaki and

Kanagawa prefectures. In June and July pilgrims brought the disease to the Turkish seaport of Jiddah with a sequel of 50 deaths.

In the year 1897 an international conference was held at Venice, Italy, and measures were devised to render effective and uniform the various procedures adopted by different countries against the threatened extension of plague.

1898.—The number of plague cases and deaths in India in 1898 as compared with the preceding year more than doubled. There were over 150,000 cases with a mortality of 117,000. A great increase took place in the city and presidency of Bombay. In the northeastern and central provinces, in Rajputana and the Punjab, there was an alarming augmentation. Over 200 cases occurred in Calcutta; the disease prevailed at Kurrachee, and among numerous other localities invaded were the presidency of Madras (with a few cases in the city of Madras) and the State of Hyderabad.

With a view to preventing the spread of the plague westward by Mussulman pilgrimages, international sanitary conventions were held at Alexandria, Egypt, and at Constantinople. Though the efforts to prohibit Mohammedan excursions failed, attention was drawn to the improvement of quarantines and the prevention of clandestine pilgrimages. Nevertheless, plague appeared at Jiddah as in the preceding year, but without very disastrous results. The prevalence at Jiddah, not amounting to 50 cases, was preceded by a single case at Nuslah, one of the neighboring villages. There were cases at Suez on steamships from Bombay and Jiddah. A further extension brought about by Moslem travel took place in Russian Turkistan, where two-thirds of the inhabitants of a village of about 350 population died. In the island of Formosa a severe epidemic prevailed, and there were cases on board ship in Japanese ports, the disease having been brought from plague-infected Chinese ports. At Hongkong there was a recrudescence with 1,300 deaths. Plague was epidemic at Amoy, and at one period there were as many as 100 cases a day. There were a few cases at Canton and the disease was present at Swatow and Macao. It also reached north China waters, a steamship from Hongkong arriving at Woosung, 10 miles from Shanghai, having had a death aboard from plague.

During this year plague extended far from its endemic home and reached the African islands of Madagascar and Mauritius. At the seaport town, Tamatav, Madagascar, there were over 200 cases; and the long-lasting affliction of Mauritius began with 2 fatal cases.

1899.—Plague continued to increase in India in 1899. The figures for the year show more than 176,000 cases and 135,000 deaths from plague in all India. Nearly 20,000 cases occurred in the city of Bombay, with a proportionate increase throughout the presidency of the same name. The presidency of Bengal, including the city of Cal-

cutta, and the presidency of Madras were notable sufferers. There were a few cases in the city of Madras. In the States of Mysore and Hyderabad thousands died. The disease prevailed widely in many other sections of India, but not with the same severity as in the localities mentioned. There was a decreased prevalence in the Punjab.

In China there were serious epidemics in Hongkong, New-Chwang, and Pakhoi. The disease was present at Amoy, Foochoo, and Yuen-Kiang. In central and western Mongolia there were wide prevalences. In Japan, plague was epidemic at Kobe and in the neighboring city of Osaka. There were cases at Hiroshima and Nagasaki. The epidemic continued to ravage the island of Formosa. The Straits Settlements were also visited, the infection being imported from Hongkong into the cities of Penang and Singapore, where it became epidemic. Forty persons died from plague at the seaport of Bushire, Persia. It was present at Jiddah, and cases were reported at Muscat and Mecca. At Bassorah, in Asiatic Turkey, plague broke out among Mohammedan pilgrims on a steamship.

In Egypt there were about 100 cases, the disease being confined to Alexandria. A recrudescence occurred at Tamatav, Madagascar, and an alarming epidemic swept the island of Mauritius and was particularly devastating at Port Louis. Mozambique suffered heavily and there were hundreds of cases at Bassam, on the French Ivory Coast. Plague was epidemic at Lourenço Marquez.

There were cases at Honolulu, marking the invasion of the Hawaiian Islands by plague. The disease was epidemic at St. Denis, the capital of Réunion Island. Cases occurred in the Pacific islands of New Caledonia.

In Europe, plague visited three widely separated countries—Portugal, Russia, and Austria. There were more than 300 cases and over 100 deaths at Oporto, Portugal. The origin of the infection was not accounted for. At Lisbon a physician died of plague after doing a necropsy at Oporto, and there were a few cases elsewhere in the country. In two Kirghiz camps in the government of Astrakhan, Russia, there were about 80 deaths from plague. In November a seaman from eastern Mediterranean ports died of plague in the municipal hospital at Trieste, Austria.

Plague took an eventful extension in the year 1899, reaching the continent of South America. At Assumption, Paraguay, there were over 100 cases; in Brazil there were about 40 cases at Santos and sporadic cases at São Paulo and Conceicao dos Guarulhos, and the disease was present at Corrientes and Formosa in Argentina.

1900.—Plague was present in every quarter of the world in 1900—Europe, Asia, Africa, Oceania, North and South America were its hosts.

Except in Bengal Presidency and in the State of Mysore the prevalence of plague in India was less intense in 1900 than in 1899. In

all India there were over 110,000 cases with about 92,000 deaths. More than 42,000 cases occurred in the presidency of Bombay, and of these cases nearly 17,000 were in the city of Bombay. Forty thousand cases were reported in the presidency of Bengal, including the city of Calcutta. The State of Mysore suffered greatly, 17,000 cases with 13,000 deaths being reported. The presidency of Madras and the State of Hyderabad had about 10,000 cases each and the Punjab about 700 cases. There were a few imported cases in the city of Madras. In the Ottoman Empire there were epidemics at Aden, Jiddah, Yembo, Muscat, and Matarah. There were cases at Smyrna and Beirut. Cases occurred among pilgrims at Tor. The prevalence at Aden was particularly grave. Persian Kurdistan was penetrated by the disease, and at Djivanro a great mortality followed. Cases also occurred on the island of Kishm, in the Persian Gulf. At Amoy, China, there were 1,500 cases; at Hongkong 1,000 deaths; many cases were recorded at Macao, and there was a devastating epidemic in the island of Hainan. An epidemic of plague swept the island of Formosa and there were prevalences at Osaka, Kobe, Hiogo, and a few cases elsewhere. In Egypt there were epidemics at Alexandria and Port Said, and the disease was present at Suakim.

The epidemic of the previous year at Mozambique was prolonged into January, 1900. New cases appeared at Tamatav, Madagascar, and the epidemics in the islands of Mauritius and Réunion continued. In South Africa a score of cases occurred in the district of King William's Town, Cape Colony. At Honolulu, Hawaii, there was an epidemic, and the disease was present at Hilo and Kahului. The Philippine Islands were included in the march of the disease, 225 cases with 150 deaths taking place at Manila. Plague was present at Malabon, San Petro Macati (near Manila), and in Cavite and Cebu. Plague present the previous year in the island of New Caledonia became epidemic. Australia became a plague center in 1900 and has lodged the disease ever since. At Sydney, New South Wales, there were about 300 cases. The disease spread in Victoria to Melbourne; in South Australia to Adelaide; in Western Australia to Fremantle; and in Queensland to Brisbane, Townsville, Rockhampton, Cairns, Charters Towers, Ipswich, and Thursday Island. At Auckland, New Zealand, plague was reported present. At Oporto a few cases of plague occurred in the first half of the year, terminating the outbreak in Portugal. But other notable extensions of the disease took place in Europe. Glasgow, Scotland, developed from an undetermined source 28 cases and 8 deaths within two months; 4 cases and 2 deaths were reported at London, England, and a single case at Cardiff, Wales. At Bremen, Germany, a seaman from Buenos Aires developed plague ashore the day after his discharge from a steamship and died of the disease. The government of Astrakhan, Russia, afflicted the previous year, was again the seat of an epidemic. There was an

epidemic in the government of Samara. The most notable fact in the year's history of plague in the western world was the appearance of 22 fatal cases at San Francisco, Cal. In South America, there were in Brazil about 600 cases at Rio de Janeiro, and the disease was present at São Paulo, Santos, Nictheroy, and Petropolis. In Argentina epidemics prevailed at Buenos Aires and Rosario, and there were cases in Paraguay at Assumption and Concepcion.

1901.—The diminution of plague in India in 1900 gave rise to disappointed hopes. In 1901 a great augmentation took place—the disease increased threefold. More than 362,000 cases and 278,000 deaths were recorded in all India. The presidency of Bombay suffered severely. The city of Bombay was greatly scourged, over 20,000 cases being recorded. Ninety thousand cases occurred in the presidency of Bengal, the epidemic more than doubling itself as compared with the preceding year. In Calcutta plague continued with about the same intensity as in 1900, nearly 9,000 cases being recorded. In the Punjab, destined in later years to become the seat of frightful devastations, the disease assumed graver proportions. An increase also took place in Madras presidency.

Plague having already established an abode in every continent, the further history of the pandemic is largely a chronicle of intra-continental expansion. In China, in 1901, it was epidemic in Hong-kong, Macao, Canton, Fat Shan, and elsewhere in the province of Quang-Tong, which was the seat of an immense prevalence. Amoy was visited by an epidemic. An increase took place in the island of Formosa, and in Japan proper there were cases at Kobe and Hiogo and epidemics at Osaka and in Shizuoka prefecture. Sporadic cases were reported at Singapore, in the Straits Settlements, marking a new step in the march of the epidemic. Scattered cases occurred in Asiatic Turkey, and in Siam there was a small epidemic at Tongkah. In Asiatic Russia an epidemic appeared at Uralsk. Plague was present at Batoom, in Asiatic Russia. The hold of the disease on Egypt was strengthened. Alexandria, Zagazig, Port Said, Mit-Gamr, Zifta, and Benha were the seats of visitations, but the disease, though disseminated, had not yet assumed the gravity that was to come in later years. Plague entered on its third year in Mozambique and the epidemic in the island of Mauritius continued its ravages. In Cape Colony there were over 700 cases in the year 1901, Port Elizabeth furnishing as a beginning of a five years' epidemic records of 100 cases, with the death of nearly one-half the cases.

Brisbane, Perth, and Sydney, in Australia, had small epidemics, and the disease was again present as in the past year at Adelaide. The epidemic in the island of Réunion entered on its third year. There was a prevalence in New Caledonia. In the Philippine Islands several hundred cases developed at Manila, with scattered cases in Cavite, Cebu, Malolos, Malabon, and elsewhere. Hawaii was visited by the

disease, 11 fatal cases being recorded at Honolulu, and the disease was reported present in Kauai Island.

Europe figured prominently in the plague chronicle of the year. The epidemic of the previous year in the Astrakhan government continued and there was an appearance of plague at Odessa. Two persons only were stricken. The origin of the infection was not accounted for. The presence in the government of Samara in 1900 was followed by an epidemic in 1901. At Batoom plague was also present. A small epidemic broke out in Constantinople, Turkey, cases appearing throughout the year. At Oporto, Portugal, where an epidemic appeared in 1899, continuing through 1900, cases to the number of 10 appeared in 1901. A limited epidemic occurred at Naples, Italy, of particular importance to the United States because of the great number of immigrants arriving at New York from that port. At Hull, England, there were 10 cases, all of which, except that of the attending physician, were members of the crew of a steamship from Alexandria, Egypt. A workman in a flour store at Cardiff, Wales, died of plague, and there were half a dozen cases at Liverpool, England. A reappearance of the disease took place at Glasgow, Scotland, the cases being few in number. In America there were 30 cases and 25 deaths at San Francisco, Cal., during the year. The disease was epidemic (nearly 400 cases during the year) at Rio de Janeiro, Brazil. Small epidemics occurred at Nitheroy and Petropolis, Brazil, and at San Nicolas de los Arroyos, Argentina. The disease was present at Assumption, Paraguay, for the third consecutive year.

1902.—The increase of plague in India in 1901 was the forerunner of a still greater augmentation in 1902. In the latter year over 765,000 cases and 575,000 deaths were recorded. The presidency of Bombay and the Punjab, with about 300,000 cases each, were the chief sufferers. The city of Bombay furnished over 16,000 cases, with 14,000 deaths. The city of Madras, notably exempt from the beginning of the epidemic in India, had 16 cases only, against 9 the preceding year. In the presidency of Bengal, including the city of Calcutta, there was a diminution of the disease.

The spread of plague became more extensive in China in 1902 and it maintained its epidemic hold on the great centers on which it had fastened itself in previous years. Chinese Turkistan, the heart of Asia, was invaded and sporadic cases appeared in French Indo-China. Formosa continued to suffer from a great epidemic; Tokyo and Yokohama had small prevalences, and the disease was present at Kobe. Singapore and the State of Selangor, in the Straits Settlements, lodged the disease, and in Turkish territory in Asia there was a scattered prevalence, Bagdad being the seat of a small epidemic. There was no improvement in Africa. In Egypt plague was epidemic all the year at Alexandria and Zifta; its presence was announced in Damietta and Port Said; and in six of the provinces there was an

aggregate of several hundred cases. At Nairobi, a small town in Zanzibar on the railroad between Mombassa and Uganda, there was a sharp epidemic of brief duration. Mozambique and Mauritius continued to be afflicted. Majunga, the most important port on the west coast of Madagascar, and Tamatav, in the same island, suffered from epidemics. Fort Bukoba, in German East Africa, was visited, and in Cape Colony and Natal there were epidemic manifestations of little importance. Australia harbored the disease in the colonies of New South Wales, Queensland, Victoria, and Western Australia. At Sydney and Brisbane the epidemics were of a grave nature. New Zealand had visitations of plague at Auckland and Lyttelton, the disease having been reported present at Auckland two years before. In the Philippine Islands there were a few cases at Manila and Cebu. Thirty-five fatal cases were reported at Honolulu and 9 cases, with 6 deaths, on Kauai Island, Hawaii. Russia and Turkey were the only European countries in which plague was reported in 1902. In the former country there were epidemics in the governments of Astrakhan and Saratov. Odessa, lightly touched by the disease the previous year, developed 50 cases in 1902. The small epidemic of the previous year at Constantinople, Turkey, was followed by a few cases in 1902. In America the United States, Mexico, Brazil, Argentina, and Paraguay were listed among the countries in which plague was present. The disease as reported in the United States was limited to 41 fatal cases at San Francisco, Cal. At Mazatlan and Ensenada, Mexico, there were small epidemics. Rio de Janeiro and Pernambuco, Brazil, were heavily scourged; Porto Alegre, in the same country, had a small epidemic, and there were cases present elsewhere in Brazil. Sporadic cases were reported at Buenos Aires, Argentina, and an epidemic outbreak of mild character occurred at Assumption, Paraguay.

1903.—Plague in India continued to increase in an alarming manner. There were nearly 300,000 more deaths from the disease than during the preceding year. The records for 1903 show for all India over 1,127,000 cases and 835,000 deaths. Hyderabad, the Central Provinces, and Central India became the seat of devastating epidemics. Nearly all regions of India that had previously been invaded showed an augmented mortality. In Asia, outside of India, China was the worst sufferer in 1903. Hongkong, Canton, Swatow, Foochoo, and New-Chwang were the seats of extensive prevalences. There was an epidemic in the province of Quang-Tong. Ha-Noi, in French Indo-China, where sporadic cases appeared the year before, developed an epidemic with over 200 deaths from April to July, 1903. The disease continued to flourish in Formosa, and there were many more cases in Yokohama than in the previous year. A few cases occurred in Siam. Over 100 cases developed at Singapore, Straits Settlements, among Chinese coolies disembarked in quarantine from a steamship from Chinese ports. In the spring of 1903 there were many

cases of plague at Hawiza, Persia. In the Turkish possessions in Asia the worst prevalence was at Assyr. On Bahrein Island, in the Persian Gulf, it is calculated that there were 1,000 deaths from plague. In Egypt about 300 cases occurred in the year, distributed among the cities of Alexandria, Port Said, and Damietta, and four of the provinces. The disease made an advance into new territory, appearing at Blida, Algeria. It was worse in the island of Mauritius in 1903 than in 1904. In British South Africa there were marked prevalences at Durban, Pietermaritzburg, Port Elizabeth, King Williamstown, and East London, the epidemic also extending to other centers of population. In Australia, plague, though showing itself in a number of cities, particularly Brisbane and Fremantle, did not assume alarming proportions. It was present at Auckland, New Zealand, where the malady had appeared the previous year after a year's absence. Having skipped a year, plague reappeared in New Caledonia, causing over 100 deaths. At Honolulu and Hilo, Hawaii, there were a few cases, and at Manila and Cebu, Philippine Islands, it was epidemic. Marseille, France, had a limited epidemic, beginning among the employees of a paper factory. In North America 17 fatal cases were reported at San Francisco, Cal. At Mazatlan, Mexico, the epidemic of the previous year took on greater proportions—over 350 cases were recorded, and the disease embraced several neighboring places. Cases continued to appear at Ensenada, Mexico. In South America, Brazil, Argentina, Chile, and Peru were the hosts of the disease. The epidemic at Rio de Janeiro continued without abatement. Porto Alegre, Pernambuco, Para, and other localities were not free from the disease. There were a few cases at Tucuman and Parana, in Argentina. In Chile a large epidemic prevailed at Iquique, and the disease was present at Valparaiso, Pisagua, and in the vicinity of Concepcion. There were also cases of plague at Callao, Pacasmayo, and Mollendo, in Peru.

1904.—Plague in India caused over 1,000,000 deaths in the year 1904. With the exception of a slight remission in the year 1900, there had been a constant annual increase since 1896. Half as many deaths occurred in 1904 as during the entire period of eight preceding years. The disease in 1904 had spread over the whole of Hindostan, prevailing with maximum intensity in the Punjab, the United Provinces, the Central Provinces, and the presidency of Bombay.

At Aden sporadic cases appearing in January developed into an epidemic of over 200 cases. In Siam plague extended to Bangkok. In Persia the principal prevalence was at Linjah. China was the seat of a wide prevalence, including the cities of Hongkong, Canton, New-Chwang, and Amoy. The epidemic raged with great violence in Formosa and there were cases at Kobe, Japan. In the Russian government of Uralsk there were about 300 cases among the Tartar and Cossack population. Eight Egyptian provinces were affected; there were over 100 cases at Alexandria; small epidemics developed at Suez

and Port Said, and the disease was present at Damietta. An improvement took place in Cape Colony and Natal, but the epidemics extended to the Transvaal and cases were disseminated through the capital city, Pretoria, and the districts of Johannesburg, Germiston, and Krugersdorf. There was also an epidemic in German East African possessions at the military station of Iringa, thirty days' march from the coast. A diminution in the number of cases in the island of Mauritius was noted as compared with the preceding year. The plague situation in Australia and New Zealand was practically the same as in 1903. In the Philippine Islands the disease was epidemic at Manila and present at Cebu, and there were cases at Honolulu and Hilo in the Hawaiian Islands. Russia was the only European country that lodged the disease in 1903. About 250 cases occurred in the Viatka Province. South America showed no amelioration. In Brazil nearly all the cities where plague was recorded the year before still continued to suffer. In Chile plague continued at Iquique and Valparaiso, and extended to Arica, Antofagasta, and Santiago. Many localities in Peru were visited, the prevalences being particularly severe at Lima and Paita. In North America no further developments were reported from Mexico. At San Francisco, Cal., 9 cases with 8 deaths were recorded.

1905.—The mortality from plague in India fell a little short of a million in 1905. Half the deaths occurred in the Punjab and the United Provinces. The prevalence was also disastrous in the presidencies of Bombay and Bengal and in Rajputana. The distribution in other countries of Asia was not materially changed in 1905. There was a slight decline in the epidemic at Hongkong. The disease was present at Amoy, New-Chwang, Foochoo, and Yingchow. Formosa continued to be devastated. There were wide prevalences at Osaka and Kobe, and a considerable number of cases at Tokyo, Hiogo, Shimonoeki, and on the Japanese island of Shikoku. Hundreds of cases occurred in the Uralsk government, Asiatic Russia. The island of Bahrein, in the Persian Gulf, suffered severely from the disease; the epidemic at Aden, which began in 1904, took on greater violence; a small epidemic occurred at Bangkok, Siam, and there were cases at Singapore, Penang, and in the province of Wellesley, in the Straits Settlements, and at Adalia, in Turkey. Egypt and British South Africa presented about the same situation as in the preceding year. There were outbreaks in British East Africa; an epidemic in the island of Zanzibar and in Mozambique, and Mauritius continued to be devastated. In Australia, plague disappeared from Western Australia, but the condition was rather worse than formerly in New South Wales and Queensland, the disease extending to new localities. Sumatra was added to the already extensive list of plague-infected regions, and the island of New Caledonia was not free from infection. In the Philippine Islands epidemics prevailed at Manila and Cebu,

and the disease was present at Cavite. There was a small epidemic at Honolulu and there were cases elsewhere in the Hawaiian Islands (Hilo, Aiea, Olaa, and Waipahu). A passenger arriving in Europe from Rangoon died ashore at Liverpool a few days after landing; another passenger, from Buenos Aires, via Hamburg, Germany, and Middlesborough, England, died ashore at Manchester; and at Leith, the port of Edinburgh, Scotland, there were 4 cases, 1 fatal, ashore. The association of the cases with the shipping could not be directly traced. Epidemics numbering hundreds of cases prevailed in the Astrakhan government in Russia. The same countries in South America lodged the disease as during the preceding year. The worst sufferers were Rio de Janeiro, Brazil; the district of Choya in the province of Santiago del Estero, Argentina; Valparaiso, Chile, and many of the Peruvian cities, especially Mollendo. The chronicle of plague in North America in 1905 is limited to 2 fatal cases at La Boca and 3 at Ancon, the first appearance of plague in Panama.

1906.—In India a great decrease of plague took place this year. There were only 332,000 deaths. Bombay Presidency and the Punjab were among the chief sufferers. There was little alteration in the plague record in China, Japan, Siam, and the Straits Settlements. The epidemics in Hongkong, Amoy, Kobe, Osaka, and Formosa continued their ravages. Plague was epidemic in Jiddah and present in Mecca. At Seistan, on the border of Lake Nayzan, Persia, hundreds of cases occurred during the first half of the year. In Turkey, at Adalia, and in the prison at Trebizond there were small epidemics. Plague was present in the Transbaikalia government, Asiatic Russia. Cases occurred at Alexandria, Cairo, and Port Said, Egypt, and in 8 Egyptian provinces. In two of these provinces, Kena and Minieh, serious epidemics prevailed. Reports show that during the period from 1899 to 1906, inclusive, 2,960 cases of plague, with 1,815 deaths, occurred in 46 localities belonging to 12 government districts in Egypt. The localities include the cities of Alexandria, Cairo, Damietta, Port Said, and Suez. The cases and deaths were distributed according to years, as follows:

Year.	Cases.	Deaths.
1899.....	93	45
1900.....	127	60
1901.....	265	102
1902.....	481	291
1903.....	303	100
1904.....	854	501
1905.....	266	181
1906.....	631	475
Total.....	2,960	1,815

The prevalence in Mauritius continued. There was an epidemic in Cape Town, and the disease was still present in British East Africa. Liberia was entered by the epidemic, adding another country to the

territory invaded by plague. The presence in Liberia was limited to Monrovia. Plague continued in Australia. There were cases at Manila, in the Philippine Islands, and at Honolulu and Kauai, in the Hawaiian Islands. With the exception of a single case, of unexplained origin, at Trieste, Austria, the prevalence in Europe was limited to the government of Astrakhan, Russia. No plague was reported in North America. In South America it continued its devastations as during the previous year in Brazil, Argentina, Chile, and Peru, and extended to Paraguay, where its presence was reported at Assumption in March and April after an absence of three years. The epidemic at Buenos Aires was of a calamitous nature, causing hundreds of deaths. Rio de Janeiro, Pernambuco, Campos, and Bahia, in Brazil, were severely scourged. Antofagasta, in Chile, was also the seat of an epidemic, and there was an extensive prevalence in Peru, including among many places Lima, Trujillo, Paita, Mollendo, Callao, Pacasmayo, Chiclayo and Lambayeque.

1907.—Disappointed hopes followed the diminution of plague in India in 1906. The year 1907 was marked by a great augmentation of the disease. About 1,400,000 cases with 1,200,000 deaths were reported in all India. The Punjab was heavily afflicted, returns showing over 700,000 cases with 600,000 deaths from plague in that section of India. Bombay Presidency recorded over 200,000 cases and 145,000 deaths. Plague was present in 1907 in every part of India in which it had appeared since the year 1896. In China it was epidemic, among other localities, in Hongkong, Amoy, and New-Chwang. Its prevalence extended to several places in Indo-China, into which country it had been introduced in 1892. The Formosan epidemic completed its twelfth year. Nagasaki and Osaka were the seats of epidemics and the disease was widely scattered elsewhere in Japan. It was present in Persia, Arabia, Siam, and the Straits Settlements. In Bahrein Island, where it made its appearance in 1903, the epidemic still continued. In Egypt the prevalence of plague was of a serious nature in Alexandria, Ismailia, Port Said, Suez, and 9 provinces. It was particularly prevalent in the provinces of Assiout, Ghizeh, Kena, and Minieh, and was present at Damietta. Plague invaded new African territory in 1907, being present in three towns of Tunis. In Algeria, there was a small epidemic at Philippsville. The disease was present in British East Africa and British South Africa. At Majunga, in Madagascar, plague was present. The epidemic in Mauritius completed its tenth year. An epidemic prevailed in Zanzibar. In Australia, where plague was introduced in 1900 and had not forsaken the country since its invasion, there were, in 1907, epidemics at Sydney, Brisbane, Cairns, and Port Douglas, and the presence of the malady was announced elsewhere in the country. New Zealand, which was

primarily invaded by plague the same year, 1900, as Australia, still continued to lodge the disease at Auckland. An epidemic of small proportions occurred at Honolulu, Hawaii. The disease was present at Olaa plantation near Hilo. For nine years Hawaii had not for a single year been free from plague. The only case in the Philippine Islands was one on board ship, the islands being free from the disease for the first time in seven years. Plague was still present in the Astrakhan government, European Russia. At Glasgow, Scotland, where small epidemics occurred in 1900 and 1901, two cases, not directly traceable to the shipping, appeared in 1907. In South America, Argentina, Brazil, Chile, Paraguay, Peru, and Uruguay, were the hosts of the disease. At Buenos Aires, Bahia, Pernambuco, Rio de Janeiro, and Antofagasta, the epidemics of the previous year continued, and at Para, in Brazil, at Pisagua and Taltal, in Chile, and at Chepen and Chosica, in Peru, there were extended prevalences. Peru had epidemics in most of its chief cities. The disease was present at Montevideo, in Uruguay, its first appearance in that country, and at Assumption and Concepcion in Paraguay. There were 2 deaths from plague at Trinidad in June, 1907, constituting its initial invasion of that island. In North America, in 1907, plague again made its appearance on the Pacific coast of the United States. In May a case from a tugboat died at the Marine Hospital at San Francisco, Cal. During the calendar year 1907, 156 cases of plague with 76 deaths occurred at San Francisco. There were also a few cases at Oakland, Point Richmond, and Berkeley, close neighbors of San Francisco. At Seattle, Wash., 3 fatal cases occurred in October.

LABORATORY PLAGUE.

In 1898 a laboratory attendant died of plague at Vienna, Austria. Later a physician and a nurse who had been engaged in the care of the attendant were taken sick with the same disease and died. In 1900 a medical student in the bacteriological laboratory at Ann Arbor, Mich., developed pneumonic plague while working with cultures of the plague bacillus. He recovered from his illness. At Berlin, Germany, in 1903, a fatal case of plague occurred in the person of a physician who was studying plague in the institute for infectious diseases. The nurse in attendance was also stricken with the disease. A laboratory attendant at Cronstadt, Russia, succumbed to plague in 1904. Again at Cronstadt, in 1907, two other laboratory cases of plague occurred—the first, a laboratory director who had been experimenting with living plague cultures; the second, a physician who attended the director of the laboratory. The former died, the latter recovered.

TABLE SHOWING THE APPEARANCE OF PLAGUE IN THE VARIOUS COUNTRIES DURING THE YEARS 1894-1907, INCLUSIVE.

1894-1895.	1900—Continued.	1903—Continued.
ASIA: China. 1896.	AMERICA: Argentina. Brazil. Paraguay. United States (California). OCEANIA: Hawaii. New Caledonia. Australia. New Zealand. Philippine Islands.	ASIA—Continued. Persia. Straits Settlements. Siam. French Indo-China. EUROPE: France. AFRICA: Mauritius. British South Africa. Egypt. Algeria.
ASIA: China. India. Japan. Asiatic Turkey. EUROPE: Russia. 1897.	1901. ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. Straits Settlements. Siam. EUROPE: Russia. Portugal. Great Britain. Italy. Turkey.	AMERICA: Argentina. Brazil. United States (California). Mexico. Chile. Peru. OCEANIA: Hawaii. New Caledonia. Australia. New Zealand. Philippine Islands.
ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. EUROPE: Russia. AFRICA: Madagascar. Mauritius. 1898.	EUROPE: Italy. Turkey. AFRICA: Mauritius. British South Africa. Egypt. Portuguese East Africa. Réunion.	1904.
ASIA: China. India. Japan. Asiatic Turkey. Arabia. Persia. Straits Settlements. EUROPE: Russia. Austria. Portugal. AFRICA: Madagascar. Mauritius. British South Africa. Egypt. French Ivory Coast. Portuguese East Africa. Réunion.	AMERICA: Argentina. Brazil. Paraguay. United States (California). OCEANIA: Hawaii. New Caledonia. Australia. Philippine Islands.	ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. Arabia. Persia. Straits Settlements. Siam. EUROPE: Russia. AFRICA: Mauritius. British South Africa. Egypt. German East Africa.
EUROPE: Russia. Austria. Portugal. AFRICA: Madagascar. Mauritius. British South Africa. Egypt. French Ivory Coast. Portuguese East Africa. Réunion.	1902. ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. Straits Settlements. Chinese Turkestan. French Indo-China. EUROPE: Russia. Turkey.	AMERICA: Argentina. Brazil. United States (California). Chile. Peru. OCEANIA: Hawaii. Australia. New Zealand. Philippine Islands.
1900. ASIA: China. India. Japan. Asiatic Turkey. Arabia. Persia. Persian Kurdistan. EUROPE: Russia. Portugal. Germany. Great Britain.	EUROPE: Russia. Turkey. AFRICA: Madagascar. Mauritius. British South Africa. Egypt. Portuguese East Africa. German East Africa. Zanzibar.	1905. ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. Arabia. Straits Settlements. Siam. EUROPE: Russia. Great Britain.
AFRICA: Madagascar. Mauritius. British South Africa. Egypt. Portuguese East Africa. Réunion.	AMERICA: Argentina. Brazil. Paraguay. United States (California). Mexico. OCEANIA: Hawaii. Australia. New Zealand. Philippine Islands.	AFRICA: Mauritius. British South Africa. Egypt. Portuguese East Africa. Zanzibar. British East Africa.
	1903. ASIA: China. India. Japan. Asiatic Turkey.	AMERICA: Argentina. Brazil. Chile. Peru. Panama.

TABLE SHOWING THE APPEARANCE OF PLAGUE IN THE VARIOUS COUNTRIES
DURING THE YEARS 1894-1907, INCLUSIVE—Continued.

1905—Continued.	1906—Continued.	1907—Continued.
OCEANIA: Hawaii. New Caledonia. Australia. Philippine Islands. Sumatra.	AMERICA: Argentina. Brazil. Paraguay. Chile. Peru. OCEANIA: Hawaii. Australia. Philippine Islands.	AFRICA: Madagascar. Mauritius. British South Africa. Egypt. Algeria. Zanzibar. British East Africa. Tunis.
1906.	1907.	AMERICA: Argentina. Brazil. Paraguay. United States (California and Washington). Chile. Peru. Trinidad. Uruguay. OCEANIA: Hawaii. Australia. New Zealand.
ASIA: China. India. Japan. Asiatic Turkey. Asiatic Russia. Persia. Straits Settlements. Siam. EUROPE: Russia. Austria. AFRICA: Mauritius. British South Africa. Egypt. British East Africa. Liberia.	ASIA: China. India. Japan. Asiatic Turkey. Arabia. Persia. Straits Settlements. Siam. French Indo-China. EUROPE: Russia. Great Britain.	

During the present year, 1908, up to July 1, Ecuador and Venezuela, in South America, and the British Gold Coast, in Africa, have been invaded by plague. The island of Terceira, belonging to the group of the Azores, was declared plague-infected July, 1908. These four countries, added to those tabulated in the foregoing list, make a total of 52 countries infected since the primary outbreak in China in 1894.

TABLES OF PLAGUE LOCALITIES, 1894-1907.

In the following tables, based largely on reports to the Public Health and Marine-Hospital Service, the designations "present" and "epidemic" are necessarily used in a somewhat arbitrary way. When in any given locality the disease has evidently formed foci, the connection between which is not clearly traceable, or where the prevalence is extensive in proportion to the population, the outbreak is designated as being "epidemic." In localities where these conditions do not obtain, or where the extent of the prevalence is unknown, the disease is entered in the tables as "present." Plague on shipboard is the subject of a separate table.

PLAGUE IN ASIA—Continued.

Locality.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
JAPAN—Continued.														
Kanagawa Prefecture.....				Present.						Present.				
Kobe.....				Present.										
Nagasaki Prefecture.....						Epidem. Present.	Epidem.				Present.		Epidem.	Present.
Osaka.....						Epidem.	Epidem.	Epidem.					Epidem.	Epidem. Present.
Sasebo.....														
Shikoku Island.....														
Shimonoseki.....								Epidem.						Present. Present.
Shizuoka Prefecture.....														
Taira Mura (Goto Island).....								Present.		Present.				
Tokyo.....								Present.		Epidem.				Epidem.
Wakayama.....									Epidem.					Present.
Yokohama.....									Epidem.					Present.
PERSIA:														
Bushire.....						Epidem.				Epidem.				
Hawiza.....											Epidem.			
Kermanshah.....														
Kisium Island.....						Present.								
Lahjeh.....														Present.
Mohammerah.....														
Seistan.....														
PERSIAN KURDISTAN														
Djivauro.....							Epidem.							
SIAM:														
Bangkok.....														
Salang Island.....														
Tonkoph.....								Epidem.						
STRAITS SETTLEMENTS:														
Penang.....						Epidem.								
Selangor State.....						Epidem.								
Singapore.....									Present. Present.					Present. Present.
Wellesley Province.....														

PLAGUE IN AFRICA.

ALGERIA:														
Bidiab.....														Epidem.
BRITISH EAST AFRICA:														
Kisumu.....														Present. Present.
Mombassa.....														
										Present.				

Nairobi.....					Present.	Present.
Port Florence.....					Present.	Present.
Uganda district.....						Present.
BRITISH SOUTH AFRICA:						
Cape Colony.....						
Cape Town.....					Epidem.	Epidem.
East London.....					Epidem.	Epidem.
Fort Beaufort.....					Present.	Present.
Grahamstown.....						Present.
Izelia, location.....						Present.
Izinyoka.....					Epidem.	Epidem.
King Williams Town.....					Present.	Present.
Knysna.....					Present.	Present.
Maitland.....						Present.
Mossel Bay.....					Epidem.	Epidem.
Port Elizabeth.....					Epidem.	Present.
Queenstown.....					Epidem.	Present.
Simons-town.....					Present.	Present.
Thomas River.....						Present.
Uitenhage.....					Present.	Present.
Wartburg.....						Present.
Natal.....						
Durban.....					Epidem.	Epidem.
Pietermaritzburg.....					Epidem.	Epidem.
Rhodesia.....						
Harare.....					Present.	Present.
Mafinga.....					Present.	Present.
Transvaal.....						
Germiston district.....						Epidem.
Johannesburg district.....						Epidem.
Kingsdorp district.....						Epidem.
Pretoria.....					Present.	Present.
EGYPT:						
Alexandria.....					Epidem.	Epidem.
Benha.....					Epidem.	Epidem.
Cairo.....						Present.
Damietta.....					Present.	Present.
Ismaïlia.....						Epidem.
Mansourah.....					Present.	Present.
Mt-Gharib.....					Epidem.	Epidem.
Port Said.....					Present.	Present.
Suakin.....						Epidem.
Suez.....					Epidem.	Epidem.
Zagazig.....					Epidem.	Epidem.
Zifta.....					Epidem.	Epidem.
Assiout Province.....						Present.
Becharah Province.....						Epidem.
Beni Souef Province.....						Present.
Charkehl Province.....						Epidem.
Dakahlieh Province.....					Epidem.	Epidem.
Gharbiel Province.....					Epidem.	Present.
Ghizel Province.....					Present.	Present.

Childrens.....					Present.			Present.	
Gladsstone.....					Present.			Epidem.	Present.
Inswich.....					Present.			Epidem.	Epidem.
Maryborough.....					Present.			Present.	
Port Douglas.....					Present.			Present.	
Rockhampton.....					Present.			Present.	
Resewood.....					Present.			Present.	
Thursday Island.....					Present.			Present.	
Townsville.....					Present.			Present.	
Victoria, Melbourne.....					Present.			Present.	
South Australia—Adelaide.....					Present.			Present.	
Western Australia—					Present.			Present.	
Bellevue.....					Present.			Present.	
Brennante.....					Present.			Epidem.	Present.
Geraldton.....					Present.			Present.	Present.
Perth.....					Present.			Present.	Present.
HAWAII:									
Aiea.....					Epidem.			Present.	
Hilo.....					Present.			Present.	
Honolulu.....					Epidem.			Present.	
Kahuli.....					Present.			Present.	
Kauai.....					Present.			Present.	
Olaa Plantation.....					Present.			Present.	
Waipahu.....					Epidem.			Epidem.	Present.
NEW CALEDONIA									
NEW ZEALAND:									
Auckland.....					Present.			Present.	
Lyttelton.....					Present.			Present.	
PHILIPPINE ISLANDS:									
Cavite.....					Present.			Present.	
Cebu.....					Present.			Epidem.	Present.
Concepcion.....					Present.			Present.	
Malabon.....					Present.			Present.	
Mabalos.....					Present.			Present.	
Manila.....					Epidem.			Epidem.	Present.
Naic.....					Present.			Present.	
Paranaque.....					Present.			Present.	
San Antonio.....					Present.			Present.	
San Pedro Macati.....					Present.			Present.	
Santa Rosa.....					Epidem.			Present.	
Taguig.....					Present.			Present.	
SUMATRA—Serdang.								Present.	

BRAZIL:						
Bahia.....						Epidem.
Campo.....						Epidem.
Conceico dos Guarulhos.....						Epidem.
Corumbá.....	Present					Epidem.
Guaratingueta.....						Epidem.
Niteroy.....	Present					Epidem.
Pernambuco.....						Epidem.
Petropolis.....	Present					Epidem.
Pindamonhangaba.....						Epidem.
Porto Alegre.....						Epidem.
Rio de Janeiro.....						Epidem.
Santos.....						Epidem.
Sao Paulo.....	Epidem					Present.
Sergipe.....	Present					Present.
Victoria.....					Epidem.	
CHILE:						
Antofagasta.....						Present.
Arica.....						Present.
Chameral.....						Present.
Concepcion (vicinity of).....						Present.
Copulimbo.....						Epidem.
Iquique.....						Present.
Pisapia.....						Present.
Santiago.....						Present.
Tacna.....						Present.
Talca.....						Present.
Valparaiso.....						Present.
MEXICO:						
Bago (near Mazatlan).....						Present.
Ensenada.....						Epidem.
Mazatlan.....						Epidem.
Oso (near Mazatlan).....						Epidem.
Sequeros (near Mazatlan).....						Epidem.
Villa Union (near Mazatlan).....						Present.
PANAMA:						
Ancón.....						Present.
La Boca.....						Present.
PARAGUAY:						
Assumption.....						Epidem.
Concepcion.....	Epidem.	Present.				Present.
PERU:						
Arequibe.....						Epidem.
Cajamarca.....						Present.
Caleta Coloso.....						Epidem.
Callao.....						Epidem.
Catacaos.....						Epidem.
Chicpen.....						Present.
Chicama.....						Epidem.
Chichayo.....						Present.
						Epidem.

PLAGUE ON VESSELS.

The following table of plague on vessels during the years 1894 to 1907, inclusive, has been prepared from the files of the public health reports and from other sources:

PLAGUE ON VESSELS, 1894 TO 1907, INCLUSIVE.

Name of vessel.	Date.	Port of arrival.	Where from.	Number of cases.	Deaths.	Remarks.
1894.						
Three river boats.....	June 4	Canton.....	Hongkong....	8	8	
Two river boats.....	June 5	.....do.....	.....do.....	4	4	
Three river boats.....	June 6	.....do.....	.....do.....	5	5	
Unknown vessel.....	June 14	Singapore.....	.....do.....	1	.....
1896.						
Steamship Gaelic.....	Mar. 29	Yokohama.....	.....do.....	1	.....	Died on shore.
Steamship Coptic.....	June —	San Francisco.....	.....do.....	1	.....	Died in Nagasaki.
Steamship Peru.....	June —	.....do.....	.....do.....	1	1	Quarantined at Nagasaki.
1897.						
Steamship Perim.....	Jan. 8	Camaratu.....	Bombay.....	.....	2	
British steamship Baldwin.	Mar. 31	Theodosia.....	Cardiff.....	1	.....
British steamship Dilwara.	.....do...	Suez.....	Bombay.....	1	.....
Japanese steamship Fukuoka Maru.	June 4	Yokohama.....	Formosa.....	1	1	
British ship Annie Maud.	July 16	San Francisco.....	Calcutta.....	3	1	
1898.						
Steamship Peninsular	.....	Suez.....	.....	2	.....
British steamship Glenturret.	Apr. —	Shanghai.....	Hongkong....	7	7	
British steamship Rohilla.	Apr. 29	Nagasaki.....	.....do.....	1	1	
Egyptian steamship Mahale.	Apr. 30	Suez.....	Jiddah.....	1	1	
American steamship Peru.	June —	Kobe.....	.....	1	1	
Japanese steamship Hikoza Maru.	June 10	Nagasaki.....	Hongkong....	1	1	
British steamship Carthage.	July 12	Suez.....	Bombay.....	1	.....	Via Aden.
British steamship Goleonda.	Dec. 24	Plymouth.....	Calcutta.....	1	.....
1899.						
Steamship Himalaya.....	.....	Port Said.....	.....	1	.....	For Marseille and London.
Steamship Haidari....	Feb. —	Bassorah.....	Bombay.....	6	6	
Steamship Mirzapore..	Mar. 12	Camaran.....	Chittagong....	.....	.....	Plague on board.
British steamship Caledonia.	Apr. 7	Aden.....	Bombay.....	1	.....
Steamship Gaelic.....	Apr. 17	Shanghai.....	Hongkong....	1	1	
Japanese steamship Nippon Maru.	May 26	Hongkong.....	Nagasaki....	1	1	
Japanese steamship America Maru.	June —	Yokohama.....	Hongkong....	2	.....
Japanese steamship Nippon Maru.	June 1	Nagasaki.....	Honolulu....	1	1	
Steamship City of Peking.	June 27	.....do.....	Hongkong....	1	1	
Japanese steamship Fukuoka Maru.	Aug. —	.....do.....	Formosa.....	1	.....
French steamship Equateur.	Sept. 8	Beirut.....	Alexandria...	1	1	
Austrian steamship Berenice.	Oct. —	Trieste.....	Santos.....	4	4	Via Cape de Verde.
Steamship Peninsular.	Oct. 9	Plymouth.....	Bombay.....	1	.....
Ottoman liner Polis Mytilini.	Oct. 27	Trieste.....	Constantinople.	1	1	
British steamship J. R. Taylor.	Nov. 17	New York.....	Santos.....	3	1	
1900.						
Japanese steamship Nanyo Maru.	Jan. 31	Port Towns- send.	Kobe.....	1	1	Via Honolulu.
Steamship Kilburn....	Mar. 6	Cape Town.....	Rosario.....	4	.....
Steamship Montevideo	Apr. —	Barcelona.....	Manila.....	2	.....	En route.

PLAGUE ON VESSELS, 1894 TO 1907, INCLUSIVE—Continued.

Name of vessel.	Date.	Port of arrival.	Where from.	Number of cases.	Deaths.	Remarks.
	1900.					
Steamship San Jorge	Apr. —	Catbalogan, P.I.	Manila	1	1	
Italian steamship Raffaele Rubattino.	Apr. 15	Messina.....	Bombay.....	1	.....	Case removed to lazaretto on Suez Canal.
Steamship Coromandel	Apr. 28	Hongkong.....	.....do.....	2	.....
Japanese steamship YeiJo Maru.	June 6	Yokohama.....	Formosa.....	1	.....
Unknown steamship	.....do.....	Nagasaki.....	Goto Island	1	1	
British steamship Rosetta.	June 11	Yokohama.....	Hongkong.....	1	1	
Steamship Roma.....	July 3	London.....	Sydney.....	4	2	Via Aden.
German steamship Rosario.	July 28	Hamburg.....	La Plata.....	1	1	
Steamship Coptic.....	Aug. 15	San Francisco.	Kobe.....	1	1	Via Honolulu.
French steamship Niger.	Aug. 22	Constantinople.	Syros.....	2	.....	Embarked at Alexandretta.
Brazilian man-of-war Benjamin Constant.	Sept. —	Rio de Janeiro.	.....	1	.....
Steamship South Garth.	Sept. 23	Glasgow.....	Rosario.....	1	1	Died Oct. 4, at Llandaff.
Steamship.....	Sept. 27	Bremen.....	Buenos Aires.	1	1	
Steamship Highland Prince.	Oct. —	Rosario.....	London.....	14	4	Via Bahia and Montevideo.
Steamship Dolphin....	Oct. 18	London.....	Calais.....	.....	.....
British ship Ben Lomond.	Oct. 26	.....do.....	Philippines....	1	.....
Steamship Hong Wan.	Dec. 24	Singapore.....	Amoy.....	1	1	
	1901.					
Steamship Pergamon..	Jan. —	Hamburg.....	Trieste.....	.....	.....	Rat plague.
— Berriz.....	Jan. 9	Constantinople.	Poti.....	4	1	
Steamship Friary.....	Jan. 10	Hull.....	Alexandria....	8	8	
Steamship Senegal....	Jan. 11	Boirnt.....	.....do.....	1	.....
Steamship Rembrandt	Jan. 20	Bristol.....	Smyrna.....	.....	.....	Do.
Steamship Roslin Castle.	Mar. —	Durban.....	.....	1	1	
British steamship Antillian.	Mar. 3	Sydney.....	Cape Town....	1	1	Three other troop ships rat infected.
British steamship Simla.	Mar. 13	Southampton.	.....do.....	1	.....
Japanese steamship Taichu Maru.	Apr. 16	Nagasaki.....	Formosa.....	1	1	
Japanese steamship Tainan Maru.	May 5	Kobe.....	.....do.....	1	.....
Japanese steamship Chiyoda Maru.	.....do.....	.....do.....	.....do.....	1	.....
American steamship Kintuck.	June 1	Nagasaki.....	.....	1	1	Among firemen from Hongkong via steamship China.
Steamship Empress of China.	June 10	.....do.....	Shanghai.....	1	1	
British steamship Carlisle City.	June 22	San Diego.....	Hongkong.....	6	6	Via Honolulu.
Japanese steamship Hiroshima Maru.	July —	Formosa.....	.....do.....	1	.....
— Laos.....	July 8	Marseille.....	Eastern Asia.	16	3	
Steamship Ville de la Ciotat.	Oct. —	.....do.....	Numea.....	1	.....
Steamship Waialeale.	Oct. —	Honolulu.....	Kauai Island..	.....	.....	Rat plague.
Steamship Patiala.....	Dec. 5	Aden.....	.....	1	.....
Steamship Pelico.....	Dec. 7	Marseille.....	Batocou.....	1	.....
	1902.					
British steamship Ballarat.	Feb. —	Shanghai.....	Calcutta.....	2	2	
Japanese steamship Taichu Maru.	Mar. 7	Nagasaki.....	Formosa.....	1	.....
British steamship Victoria.	Apr. —	Suez.....	Bombay.....	1	.....
British steamship City of Perth.	June 10	Dunkirk.....	Calcutta.....	2	2	
Do.....	June 18	Month of Thames.	Dunkirk.....	1	.....
— Duca de Galliera..	June 23	Genoa.....	Buenos Aires.	2	.....
Do.....	July 16	Barcelona.....	.....do.....	.....	.....	Present on board.
French steamship Espagne.	July 18	Marseille.....	.....do.....	.....	.....	Do.
Steamship Purulia....	Oct. 3	Rangoon.....	Calcutta.....	1	.....

PLAGUE ON VESSELS, 1894 TO 1907, INCLUSIVE—Continued.

Name of vessel.	Date.	Port of arrival.	Where from.	Number of cases.	Deaths.	Remarks.
1903.						
British ship.....		Singapore.....	Chinese ports.....			104 cases in quarantine.
Steamship Oroya.....	Jan. 10	Marseille.....	Colombo.....			Several cases.
British steamship Soudan.....	Feb. 20	Aden.....	.....	1	1	
Steamship Syria.....	Mar. 9	.....do.....	.....	1	1	
Steamship Nevassa.....	Mar. 21	South Africa.....	.....	4		
Steamship Sultan.....	Mar. 31	Frementle.....	Singapore.....	1		
Japanese steamship Kagashima Maru.....	May 4	Yokohama.....	Bombay.....	1		
German steamship Aragonia.....	May 30	.....do.....	.....	1		
Japanese steamship Kaga Maru.....	June 15	.....do.....	Seattle.....	1		
Russian war vessel Otvazny.....	Aug. 18	Nagasaki.....	Shanghai.....	2	1	
1904.						
British steamship Knight of the Thistle.....	Mar. 14	Suez.....	Bombay.....	1		
British steamship Plaisy.....	Mar. 10	.....do.....	.....do.....	1	1	
British steamship Arcadia.....	Mar. 16	.....do.....	Sydney.....	1	1	
Steamship Limari.....	Apr. 21	Callao.....	.....	1		
Austrian steamship Imperatrix.....	May 2	Suez.....	Bombay.....	1		Patient landed at Aden.
.....	May 21	Hongkong.....	Amoy.....	1		
Steamship Korea.....	May 31	Kobe.....	Hongkong.....	1	1	
Steamship Australien.....	June	Wusung.....	Kobe.....	1		
.....	June 4	Hongkong.....	Hong Shan.....	1		
.....	June 18	.....do.....	Canton.....	1		
Steamship Glenogle.....	.....do.....	.....do.....	Singapore.....	1		
Steamship Restorer.....	.....do.....	.....do.....	.....do.....	1		
Steamship Coptor.....	Aug. 22	Honolulu.....	.....	1	1	From oriental ports.
Steamship Bishopgate.....	Sept. 19	South Shields.....	Rosario.....	1		
British steamship Seald.....	Nov. 3	Moji.....	Rangoon.....	3	3	
Steamship Weybridge.....	Nov. 30	London.....	Buenos Aires.....	1		
1905.						
Steamship Crewe Hall.....	Feb. 7	Liverpool.....	Rangoon.....	1	1	
Steamship Aida.....	Feb. 8	Port Said.....	Suez.....	2	2	
Austrian steamship Imperator.....	Feb. 13	Bombay.....	.....do.....	1		Patient landed at Aden.
.....	June 4	Callao.....	.....	1		
Steamship Hylas.....	June 8	Manchester.....	Argentina.....	1	1	
Japanese steamship Kerjo Maru.....	July 17	Shimonoseki.....	Osaka.....	1	1	
Steamship Niger.....	.....do.....	Beirut.....	Egypt.....	1		
British steamship Banca.....	Sept. 17	Cebu.....	Hongkong.....	2		
Steamship Pizarro.....	Nov. —	Paita.....	.....	1		
Steamship Santiago.....	Nov. —	.....do.....	.....	1		
British steamship Oropesa.....	Dec. 10	Liverpool.....	Valparaiso.....	3		
1906.						
Steamship China.....	Mar. 13	Manila.....	San Francisco.....	1	1	
Steamship Burrsfield.....	Apr. 6	Reedy Island Quarantine.....	Bombay.....	2	1	
British steamship Pegu.....	Apr. 12	Suez.....	Rangoon.....	1	1	
Steamship Siberia.....	May 28	Yokohama.....	Hongkong.....	1		
Steamship Braila.....	July 11	Trebizond.....	Constantinople.....	1	1	Died in prison Aug. 8.
Steamship Britannia.....	July 12	Adelaide.....	Melbourne.....	1		
Steamship Limari.....	Oct. 4	Callao.....	Valparaiso.....	1		
Steamship Calypso.....	Nov. 7	Trieste.....	Venice.....	1	1	
1907.						
British steamship Saxon Prince.....	Jan. 10	Santos.....	Buenos Aires.....	1		
Japanese steamship America Maru.....	Jan. 29	Honolulu.....	.....	1	1	From oriental ports.
British —.....	Feb. 4	British East Africa.....	.....	1	1	
Steamship Tsesarevitch.....	Apr. 30	Odessa.....	Alexandria.....	1	1	
Steamship Arawatta.....	May —	Melbourne.....	.....	1	1	
Steamship Moshtari.....	May 23	Jiddah.....	Bassorah.....	8		

PLAGUE ON VESSELS, 1894 TO 1907, INCLUSIVE—Continued.

Name of vessel.	Date.	Port of arrival.	Where from.	Number of cases.	Deaths.	Remarks.
	1907.					
American tug Wizard .	May 23	San Francisco		1	1	Died on shore.
British steamship Wharfedale.	May 28	Groden	Buenos Aires.	1		
German steamship Ferd. Laiesz.	July 23	Manila	Chinese ports.	1	1	
Steamship Samoa	Aug. 12	San Francisco		1	1	
Steamship Sierra	Sept. 14	Honolulu	San Francisco	1		
Steamship Mareeba	Sept. 16	Brisbane	Newcastle	1	1	
French steamship Or- leanais.	Oct. 30	Rio de Janeiro .	Marseille	7	2	

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